



U.S. Department
of Transportation
Pipeline and
Hazardous Materials
Safety Administration

IAEA CERTIFICATE OF COMPETENT AUTHORITY
SPECIAL FORM RADIOACTIVE MATERIALS
CERTIFICATE NUMBER USA/0695/S-96, REVISION 1

400 Seventh Street, S.W.
Washington, D.C. 20590

This certifies that the source described has been demonstrated to meet the regulatory requirements for special form radioactive material as prescribed in the regulations of the International Atomic Energy Agency¹ and United States of America² for the transport of radioactive materials.

1. Source Identification - QSA Global Inc. Model III Source Capsule.
2. Source Description - Cylindrical single over-encapsulation consisting of a capsule body, sealing plug, and cap made of stainless steel that provides a metal-to-metal seal when assembled. Approximate outer dimensions are 63.5 mm (2.5 in.) in diameter and 177.8 mm (7.0 in.) in length. Minimum wall thickness is 7.62 mm (0.3 in.). Final assembly shall be in accordance with attached AEA Technology QSA, Inc. Drawing No. R20048, Rev. B.
3. Radioactive Contents - The capsule described by this certificate is authorized to contain any one of the following radionuclides in the chemical forms identified and limited to the activity shown in the table below. The radioactive material is limited to solid form in stainless steel capsules, between layers of non-radioactive stainless steel, or affixed to non-radioactive stainless steel by electroplating or other means. The maximum mass of the contents is limited to 1,000 grams.

Radionuclide	Maximum Activity	Chemical/Physical Form
Americium-241	1.85 TBq (50.0 Ci)	Oxide or oxide incorporated into a ceramic enamel
Americium-241:Be	1.85 TBq (50.0 Ci)	Oxide mixed with beryllium powder pressed into a solid pellet or intermetallic
Californium-252	199.8 GBq (5.4 Ci)	Oxide or oxide in palladium metal to form a cermet
Cesium-137	55.5 TBq (1,500.0 Ci)	Cesium in silicate glass matrix, sulfate pellet, compressed anhydrous chloride pellet or aluminosilicate ceramic pellet

¹ "Regulations for the Safe Transport of Radioactive Materials, 1996 Edition (Revised)", No. TS-R-1 (ST-1, Revised), published by the International Atomic Energy Agency (IAEA), Vienna, Austria.

² Title 49, Code of Federal Regulations, Parts 100 - 199, United States of America.

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Radionuclide	Maximum Activity	Chemical/Physical Form
Cobalt-60	40.0 TBq (1081.1 Ci)	Metal
Curium-244	3.7 TBq (100.0 Ci)	Oxide or oxide incorporated into a ceramic enamel
Iridium-192	37.0 TBq (1000.0 Ci)	Metal
Plutonium-238	7.4 TBq (200.0 Ci)	Oxide or oxide incorporated into a ceramic enamel
Plutonium-238:Be	7.4 TBq (200.0 Ci)	Oxide mixed with beryllium powder or intermetallic pressed into a solid pellet
Plutonium-239	3.7 TBq (100.0 Ci)	Oxide incorporated into a ceramic enamel, metal foil or metal plated to substrate (total 350 grams Pu-239 isotope)
Plutonium-239:Be	3.7 TBq (100.0 Ci)	Oxide mixed with beryllium powder or intermetallic pressed into a solid pellet (total 350 grams Pu-239 isotope)
Strontium-90	37.0 TBq (1000.0 Ci)	Strontium titanate, strontium fluoride, oxide in ceramic enamel or fluoride in aluminum metal matrix
Radium-226	370.0 GBq (10.0 Ci)	Sulphate or chloride

4. Special Conditions -

- a. Capsule assembly shall be conducted in accordance with QSA Global Inc. H1071, Rev. 5, Assembly Procedure for the Model III Special Form Capsule.
- b. Capsule components must be obtained from QSA Global Inc.
- c. A copy of the applicable, completed Record Sheet required by QSA Global Inc. H1071, Rev. 5, Assembly Procedure for the Model III Capsule, shall be attached to this IAEA Certificate of Competent Authority in order to demonstrate the regulatory requirements for special form radioactive material have been met.

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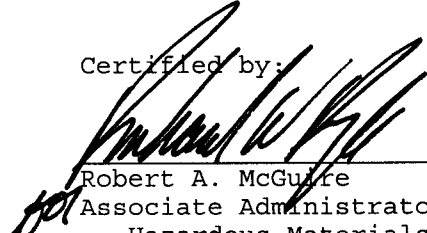
5. Quality Assurance -

- a. Each assembler of the Model III Source Capsule shall register their identity, in writing, and provide evidence of a Quality Assurance program based on international or national standards to the Office of Hazardous Material Technology (PHH-23), Pipeline and Hazardous Materials Administration, U.S. Department of Transportation, Washington, D.C. 20590-0001.
- b. Assembly of the Model III Source Capsule shall be performed under the Quality Assurance program registered with the U.S. DOT.
- c. Records of Quality Assurance activities required by paragraph 310 of the IAEA regulations¹ shall be maintained and made available to the authorized officials for at least three years after the last shipment authorized by this certificate. Consignors and consignees in the United States exporting or importing shipments under this certificate shall satisfy the requirements of Subpart H of 10 CFR 71.

6. Expiration Date - This certificate expires on February 28, 2011. On July 31, 2006, this certificate supersedes, in its entirety, all previously issued revisions of USA/0695/S-96.

This certificate is issued in accordance with paragraph 804 of the IAEA Regulations and Section 173.476 of Title 49 of the Code of Federal Regulations, in response to the petition and information dated May 26, 2006 submitted by QSA Global Inc., Burlington, MA, and in consideration of other information on file in this Office.

Certified by:

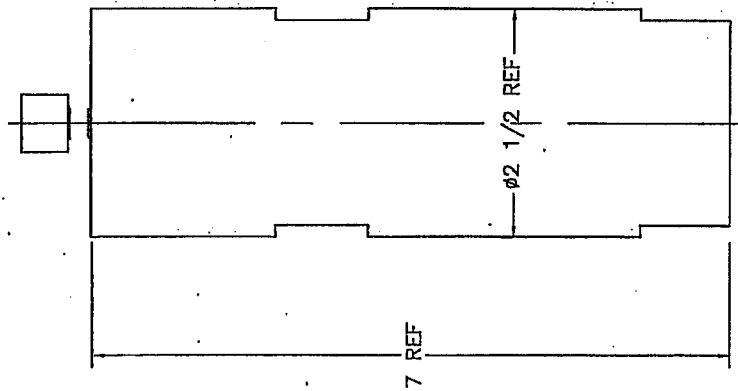
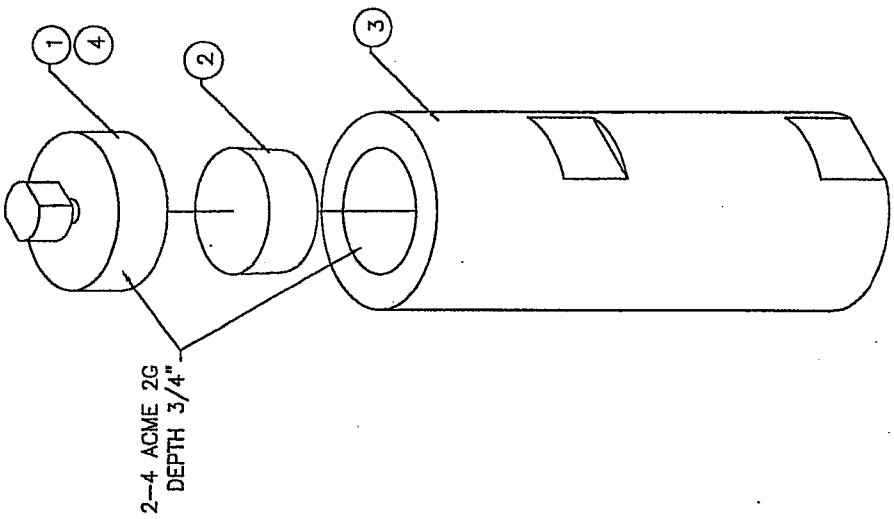

Robert A. McGuire
Associate Administrator for
Hazardous Materials Safety

JUN 15 2006

(DATE)

Revision 1 - Issued to correct typographical error.

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CAPSULE AFTER ASSEMBLY
(KNOB SHEARED OFF)

4	LUBRICANT	AR	Dupont Krytox LVP Fluorinated Grease
3	BODY	1	ST. STEEL
2	SEALING PLUG	1	ST. STEEL
1	CAP	1	ST. STEEL
ITEM NO. PART NAME QTY. DESCRIPTION			
APPROVALS DATE			
<i>L. B. Miller</i> 10/10/05			
<i>R. P. Miller</i> 10/10/05			
UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONS ± 1/8 DECIMALS ± .015 XXX ± .016 XXXX ± 0.020			
AESATECHNOLOGY CSA 40 NORTH AVE. BURLINGTON, MA 01803			
DESCRIPTIVE DRAWING			
TITLE SPECIAL FORM CAPSULE MODEL III			
SIZE		DWG. NO.	REV
B		R20048	B
SCALE:		NTS	SHEET 1 OF 1

ERT#
991

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